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Overview

Our NEH-funded program (HT5003810), The Digital Institute for Archaeology (IDA) at the University of Arkansas' Center for Advanced Spatial Technologies, was very successful and for the two years the program was active, we hosted an excellent group of visiting fellows. Their experience with the program led to many significant professional achievements, while their collaboration with CAST faculty and staff has resulted in a wide range of ongoing initiatives. The program also laid the foundation for a new program at CAST, Spatial Archaeometry Research Collaborations (SPARC), funded by the National Science Foundation.

a. Project Activities

The IDA program offered junior scholars in archaeology (those in the final stages of their PhD programs or who have received PhDs within the last five years) the opportunity to spend a full semester in residence as visiting fellows at the University of Arkansas. During their residency, IDA fellows enrolled in up to three specialized courses in geospatial technologies, pursued independent research projects with support of CAST staff and facilities, and participated in colloquia, field trips and short courses. Detailed information about the program is available here: http://cast.uark.edu/home/education/digital-institute-for-archaeology-visiting-fellowships.html

Fellows' research and education were supported by numerous faculty, including program director, Jesse Casana, CAST director Jackson Cothren, as well as geomatics and archaeology specialists, Kenneth Kvamme, Fred Limp, Jason Tullis, and Dave Frederick. In addition, CAST research associate, Katie Simon, a specialist in geospatial applications in archaeology, was hired to help run the program and work with the fellows individually. Other CAST staff offered help as needed.

We advertised the program in several venues including the Society for American Archaeology website, the Archaeological Institute of America website, and the Shovelbums.org jobs and fellowship listing website. We also sent email announcements to top archaeology departments, colleagues, and likely candidates. We benefited a great deal from the reputation of the program as past fellows told their friends and colleagues about the opportunities afforded them by it. We received more than 50 applications in each of the final semesters of the program, including a significant number of international applicants, and a highly diverse pool in terms of race and gender. Applicants came from many different career levels as well, ranging from those in the early stages of PhD programs to those who had already completed postdoctoral positions elsewhere.

b. Accomplishments

The IDA program was highly successful in recruiting and training junior scholars in archaeology, as well as in fostering their access to geospatial resources and expertise available at the Center for Advanced Spatial Technologies. The primary accomplishment of the program is in training the sixteen visiting fellows who participated in the program. Fellows supported by the IDA program are as follows:

2010-2011 AY

Brian McKee (PhD, University of Arizona 2007) improved his familiarity with GIS-based analysis of regional settlement patterns in his main research area of El Salvador, with particular emphasis on volcanic landscapes.

Michael Press (PhD, Harvard University 2007) develop a project utilizing WWI and WWII aerial photography of southern Israel and Palestine to build a historical imagery atlas of the project.

Lauren Lippiello (PhD candidate, Yale University) explored use of remote sensing and predictive modeling techniques to assist with her dissertation research on Paleolithic and Pre-Dynastic rock art sites in Upper Egypt.

Rachel Opitz (PhD, Cambridge University 2009) developed her work using high-resolution LIDAR data and other remote sensing sources to build detailed models of ancient settlement in Italy and France, and explored use of virtual gaming technologies for display and exploration of 3D data.

Andrew Clark (PhD candidate, SUNY Albany) pursued a project focusing on analysis of regional settlement in the Middle Missouri River region of South Dakota using historic aerial photography and predictive modeling.

Carla Klehm (PhD candidate, University of Texas at Austin) pursued a project focusing on regional settlement history using remote sensing and predictive modeling to evaluate Iron Age settlement in central Botswana.

Michael Teichmann (PhD candidate, University of Kiel) undertook a project focusing on geoarchaeology and regional settlement history of the Roman landscape in central Italy, with particular emphasis of the feasibility of multi-spectral satellite imaging as a tool in site mapping.

2011-2012 AY

Kevin Fisher (PhD 2007, University of Toronto) focused on scanning and geophysical surveys as tools to explore urban landscapes in Bronze Age Cyprus.

Hannah Friedman (PhD 2010, University of Leicester) took advantage of new historic satellite imagery being worked with at CAST to explore landscapes of the Roman Middle East

Douglas Park (PhD 2011, Yale University) explored the feasibility of regional-scale satellite remote sensing in archaeological survey surrounding Timuktu, Mali.

Rebecca Nathan (PhD candidate, University of InIDAna) used predictive modeling and remote sensing to aid with regional archaeological survey in the Big Horn Canyon area of western Montana and Wyoming

Jannie Scott (PhD candidate, University of Texas) explored the potential of ground-based and aerial remote sensing technologies to aid with dissertation research focusing on historic Freeman towns in central Texas.

Mandy Chan (PhD candidate, University of Pennsylvania) investigated the use of aerial and satellite remote sensing to aid in archaeological surveys and excavations in central and western China

Bethany Simpson (PhD candidate, University of California at Los Angeles) worked with 3D laser scanning and digital photogrammetry to create reconstructions and visualizations of a classical site in the Fayum region of Egypt.

Dan Lawrence (PhD candidate, Durham University, UK) worked closely with a CAST project funded by NASA to document archaeological sites in Syria, Turkey and Iraq using historic satellite imagery.

Nayden Prahov (PhD candidate, University of Sophia, Buglaria) worked to develop predictive site location models for early settlements now submerged by the Black Sea, along the coastlines of Bulgaria and Romania.

In addition to their residency, most of our fellows also benefited from the opportunity to participate in field projects to advance their own research projects and develop new skills in geospatial technologies. Jannie Scott undertook exploratory fieldwork at her dissertation site in Buda, Texas. Rachel Opitz conducted a 3D laser scanning and photogrammetry project at a megalithic monument in Ireland. Mandy Chan and Kevin Fisher participated in a CAST field program in Cyprus in summer 2012. Nayden Prahov participated in an underwater archaeological survey in Southhampton, UK. Bethany Simpson worked with Rachel Opitz doing archaeo-geomatics at the site of Gabi, Italy. Dan Lawrence participated in a new survey project in Azerbaijan. Lauren Lippiello participated in a CAST-sponsored field program in Greece. Carla Klehm undertook a collaborative geophysical survey with CAST staff members on her field project in Botswana. Michael Press made a research trip to pursue his landscape reconstruction project in Israel. Douglas Park used his funding to support a final field research trip to Mali. In addition, most of the fellows participated in field projects sponsored by Arkansas faculty members, learning geophysical prospecting methods at sites in Arkansas and New Mexico.

d. Evaluation

Although no formal evaluation of the program was undertaken, the success of our strategy is manifest in the great success achieved by our fellows and in the ongoing institutional collaborations generated by it (see below in "Continuation of the Project" and "Long Term Impact").

While most of this report focuses on the successes of the IDA program, there were a number of challenges we faced in its implementation that could be instructive to future similar initiatives. One of the greatest difficulties we encountered was in dealing with our own University administration, particularly in regards to the status of the fellows on campus. In order to allow them to enroll in courses, we classified them with the registrar's office as "Non-Degree Seeking Students." This enabled them not only to enroll but also to benefit from all other campus services including library and internet access, health care, the gym, etc. However, this fact also meant that fellows needed to formally apply to the University and thus to pay application and registration fees. Foreign fellows or those without health coverage were also required by state law to purchase health insurance in order to participate. In addition, this meant that fellows were formally graded in the classes they took, which was often awkward, particularly as most fellows were either already enrolled at other institutions or postdoctoral scholars. In the future, I would try to find another designation for fellows that would offer campus access, but which would not involve all the legal requirements of being a formally enrolled student.

Another more practical issue we encountered was the semester length of fellowships. While this worked well for students already enrolled in PhD programs elsewhere, most of our postdoctoral applicants would have been able to manage the program much more easily if it had been an academic year in length. In fact, the majority of our postdoctoral fellows, and indeed many of our pre-doctoral fellows, ended up staying on campus for at least a full academic year, generally finding alternative sources of funding or work for a second semester. Obviously it would add considerably to costs or reduce the total number of fellows, but in the future, a year-long option would probably make the program more feasible for many prospective applicants.

Finally, I found personally that the administration of many of the more quotidian issues, ranging from deposits on rental apartments, to the lack of vacuum cleaners, to the complex process of securing visas for foreign fellows to be an enormous undertaking. In order to make the

program viable at the cost which we did it, I probably under-resourced the staff time truly necessary to make the program work, and so in the future I would dedicate more funds to additional staff support.

e. Continuation of the Project

The IDA program has resulted in many ongoing colorations with fellows, as outlined below in "Long Term Impact." As far as a direct continuation of the project is concerned, the IDA program served as the template and proof-of-concept that helped secure a new grant from the National Science Foundation's Archaeometry program, awarded in August 2013. This grant will support a program we call Spatial Archaeometry Research Collaborations (SPARC), which will provide training and direct support to field and research projects: http://sparc.cast.uark.edu/home As with the IDA program, we had initially envisioned a visiting fellows program to go along with direct support for field projects, although sequester cuts forced us to trim funding from the SPARC grant to the point that a fully-funded fellows program was really not viable. We nonetheless however continue to solicit visiting fellows funded through other sources, particularly for participants or PIs on projects supported by SPARC. If the SPARC program is successful in its first two years, we may seek funding from either NSF or NEH to reinstate the IDA as a complementary program.

f. Long Term Impact

The long-term impacts of the IDA program are almost too numerous to mention, but may be best represented by the professional success that many fellows have gone on to achieve after their residencies. Kevin Fisher, after collaborating with CAST on a field school at his research site in Cyprus, secured a tenure-track faculty position at the University of British Colombia. Hannah Freidman also worked on several projects at CAST after her residency, and has now been hired to a tenure-track position at Texas Tech University. Michael Press received a prestigious postdoctoral fellowship from the Shelby-White foundation and is now based at CAST for his work. Andrew Clark worked with CAST over the past year on a remote sensing project on the Upper Missouri River and has now been hired as a senior archaeologist at the State Office Historic Preservation Office in South Dakota. Douglas Park and Lauren Lippiello both completed their PhDs at Yale, and have now been hired to teaching positions at Rice University. Rachel Optiz worked as a CAST staff member on numerous projects including analysis of LiDAR data and recently completed an 18-month postdoctoral position at the University of Vienna. Dan Lawrence completed his PhD while a fellow, and is now a postdoctoral scholar on a major research project in Durham University. Carla Klehm leveraged her research at CAST to secure a National Science Foundation dissertation grant, and after two successful seasons of fieldwork, is now on her way towards completing her PhD. In addition, several other more junior fellows, including Rebecca Nathan, Nayden Prahov, and Jannie Scott are well on their way to finishing their PhDs thanks in part to the IDA program.

In addition to the support provided to IDA fellows directly, the success of the program has helped to build both the reputation and resources at CAST and the University of Arkansas. We have numerous ongoing collaborations with former fellows to conduct grant-funded research, including for example a 3-year project to map archaeological landscapes on the Upper Missouri River Valley with Andrew Clark, an NEH Digital Start Up grant to support development of aerial thermography in part at Kevin Fisher's field site in Cyprus, and an ongoing collaboration with UCLA to conduct 3D scanning and geophysics at sites in Egypt. Perhaps most significantly, the IDA program served as the template and proof-of-concept that helped secure a new grant from the National Science Foundation's Archaeometry program. This grant, described above, will support a program we call Spatial Archaeometry Research Collaborations, including a visiting fellowship component: http://sparc.cast.uark.edu/home

The IDA program has been a truly wonderful experience for the fellows and for the participants at the University of Arkansas and we are deeply indebted to the NEH for making this fine program possible. Please do not hesitate to contact me should you require any further details regarding the program, its participants, or the many success stories that have come out of it.